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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,095	11/26/2003	Qing Bai	10030711-1	1128
57299	7590	03/23/2006	EXAMINER	
AVAGO TECHNOLOGIES, LTD. P.O. BOX 1920 DENVER, CO 80201-1920			LAM, CATHY FONG FONG	
			ART UNIT	PAPER NUMBER
			1775	

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/723,095

Applicant(s)

BAI, QING

Examiner

Cathy Lam

Art Unit

1775

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) 1-16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>11-26-03, 4-20-05, 01-09-2006</u> | 6) <input type="checkbox"/> Other: ____.  |

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1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-16, drawn to a method for manufacturing a device, classified in class 29, subclass 829.
  - II. Claims 17-24, drawn to a device, classified in class 439, subclass 66.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the process as claimed can be used to make a different product such as a pressure sensitive key pad. The product as claimed can be made by a different process such as by place a mask over a substrate, coat the mask with a semi-cured resin material, then remove the mask, cure the resin material, coated the resin with a metal. Place a preformed gasket around the metallized resin pattern. Bring the substrate in contact with another substrate for electrical connection.

3. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Atty Jon Holland on March 7<sup>th</sup> 2006 a provisional election was made without traverse to prosecute the invention of group I, claims 17-24. Affirmation of this election must be made by applicant in replying to this

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Office action. Claims 1-16 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

***Specification***

5. The disclosure is objected to because of the following informalities: on page 10 ¶ 0040, line 2 states gasket 21, however numeral 21 is depicted as one of the substrates throughout the specification.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

6. Claims 17-19 and 23 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 17-19, it is vague and indefinite as to whether "first material" (in claims 18-19) is referring to "first, compliant material" in claim 17. Applicant is required to be consistently throughout.

In claim 23, there is lack of antecedent basis for "said compliant gasket".

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 17-21 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Chang et al (US 6365500) or Karnezos (EP 0295914).

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Chang discloses a bonded structure comprised of two substrates (20,30), conductive pads (24,26) and composite bumps (32).

The conductive pads (24,26) are formed onto the substrates' surfaces. The composite bumps (32) are formed onto the conductive pads (26) (Fig. 1). The composite bumps (32) are used for electrically connecting the two substrates together (col 3 L 40-41).

The composite bump is a polymer body such as polyimide and coated with a metal (36) (col 3 L 20-25). The composite bumps would deform during the bonding of the two substrates (col 2 L 33-35).

The metal (36) that coats the polymer body comprised of gold which according to Applicant's disclosure, has good hermetic sealing property.

Karnezo also discloses an interconnect structure comprised of two substrates (12,26), conductive pads (14',14'',14''' & 28',28'',28''') and conductive buttons (16',16'',16''') (Fig. 3).

The conductive buttons are used for connecting the conductive pads formed on the substrate surfaces. Each conductive button is comprised of a resilient core made of polyimide and a metallization coating (20) (col 5 L 55-col 6 L 5).

The metallization coating comprises gold (col 5 L 30-32). The conductive buttons would deform when force exert onto the substrates (col 6 L 21-26).

9. Claims 17-21 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nolan et al (US 5508228).

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Nolan teaches a connection bump (24) that is used for bonding two substrates (12,28) (Fig. 3).

The connection bump is a compliant or compressible bump (24) and is coated with a metallization layer (26) (col 3 L 47-53).

The bump is made of a polymer material such as polyimide and the metallization layer (26) coated over the bump is a gold layer (col 11 L 15-18 and col 5 L 51-52).

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 22, 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chang et al (US 6365500) or Karnezos (EP 0295914) or Nolan et al (US 5508228) in view of Neidich (US 6358063).

Chang, Karnezos and Nolan all teach a structure comprised of two substrates that are electrically connected through a compliant conductive bump.

The prior art however do not teach having a gasket around the conductive bumps.

Neidich teaches an interposer assembly comprised of an interposer (or connector) and a gasket, wherein the assembly is placed between two circuit members (col 1 L 63-67).

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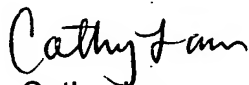
\the gasket (24) is a resilient material which surrounds the entire outer periphery of the interposer (16) (col 2 L 59-65, Figs. 2 & 8).

In view of the prior art teachings, one skill in the art would include a gasket of any desired material in a face-to-face circuit bonding assembly because the gasket serves as an edge sealant as well as prevents contaminants.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Cathy Lam  
Primary Examiner  
Art Unit 1775

cfl

March 17, 2006